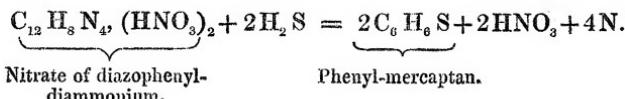


a corresponding transformation under the influence of sulphuretted hydrogen.

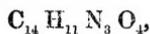


It is obvious that the last reaction supplies a general method for the production of the mercaptans belonging to the homologues of the phenyl-series, the first representative of which was discovered a few months ago by Vogt, who obtained it by submitting the chloride of sulpho-phenyl to the action of hydrogen.

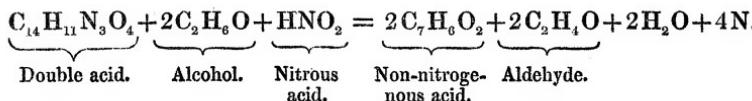
The observations described in this Note were made in Professor Hofmann's laboratory.

**VII. "Reproduction of Non-Nitrogenous Acids from Amidic Acids."** By PETER GRIESS, Esq. Communicated by Dr. HOFMANN. Received May 24, 1861.

In several previous communications I have pointed out the existence of a peculiar double acid,



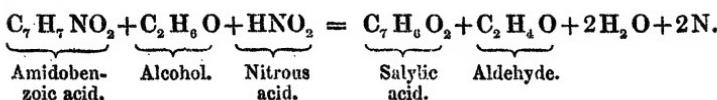
formed by the action of nitrous acid on amidobenzoic acid. This acid, which I have designated as *amidodiazobenzoic acid*, when again submitted in the presence of hot alcohol to the action of nitrous acid, is changed according to the following equation:—



The non-nitrogenous acid thus reproduced exhibits the composition of benzoic acid; it differs, however, in its properties essentially from that acid. Since the publication of Kolbe and Lautemann's experiments on salylic acid, I have found that the acid in question is identical with the latter.

Salylic acid may be much more readily obtained by submitting an

alcoholic solution of amido-benzoic acid itself to the action of nitrous acid.



Nearly all the amidic acids I had an opportunity of examining exhibit a similar deportment, furnishing a non-nitrogenous acid isomeric or identical with the acid which, by conversion into a nitro-compound and subsequent reduction, had given rise to the formation of the amidic acid. In the following cases I have experimentally established this transformation.

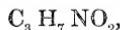
$\underbrace{\text{C}_7\text{H}_6\text{O}_2}_{\text{Benzoic acid.}}$	$\underbrace{\text{C}_7\text{H}_5(\text{NO}_2)\text{O}_2}_{\text{Nitrobenzoic acid.}}$	$\underbrace{\text{C}_7\text{H}_5(\text{H}_2\text{N})\text{O}_2}_{\text{Amidobenzoic acid.}}$	$\underbrace{\text{C}_7\text{H}_6\text{O}_2}_{\text{Salylic acid.}}$
$\underbrace{\text{C}_8\text{H}_8\text{O}_2}_{\text{Toluic acid.}}$	$\underbrace{\text{C}_8\text{H}_7(\text{NO}_2)\text{O}_2}_{\text{Nitrotoluic acid.}}$	$\underbrace{\text{C}_8\text{H}_7(\text{H}_2\text{N})\text{O}_2}_{\text{Amidotoluic acid.}}$	$\underbrace{\text{C}_8\text{H}_8\text{O}_2}_{\text{Homologue of salylic acid.}}$
$\underbrace{\text{C}_8\text{H}_8\text{O}_3}_{\text{Anisic acid.}}$	$\underbrace{\text{C}_8\text{H}_7(\text{NO}_2)\text{O}_3}_{\text{Nitransic acid.}}$	$\underbrace{\text{C}_8\text{H}_7(\text{H}_2\text{N})\text{O}_3}_{\text{Amidanisic acid.}}$	$\underbrace{\text{C}_8\text{H}_8\text{O}_3}_{\text{Anisic acid.}}$
$\underbrace{\text{C}_6\text{H}_4(\text{NO}_2)_2\text{O}}_{\text{Dinitrophenylic acid.}}$	$\underbrace{\text{C}_6\text{H}_3(\text{NO}_2)_3\text{O}}_{\text{Trinitrophenylic acid.}}$	$\underbrace{\text{C}_6\text{H}_3(\text{NO}_2)_2(\text{H}_2\text{N})\text{O}}_{\text{Dinitramidophenylic acid.}}$	$\underbrace{\text{C}_6\text{H}_4(\text{NO}_2)_2\text{O}}_{\text{Dinitrophenylic acid.}}$

It deserves to be noticed, that while amidobenzoic and amidotoluic acid furnish acids isomeric respectively with benzoic and toluic acid\*, anisic and dinitrophenylic acid are re-obtained with all their original properties. The properties of salylic acid, and of its derivatives, render it probable that salylic acid—and not benzoic as was hitherto assumed—is in the group of aromatic acids the true representative of acetic acid. Salylic, chlorosalicylic, and salicylic acids exhibit in fact the same intimate relations which obtain between acetic, chloracetic, and glycolic acids. It is true the same relations may be traced in the composition of benzoic, chlorobenzoic, and oxyben-

\* The acid  $\text{C}_8\text{H}_8\text{O}_2$ , described by Strecker, probably belongs to a different group of compounds. In its transformations, and more especially in its conversion under the influence of oxidizing agents, into oil of bitter almonds, it differs both from toluic acid and the homologue of salylic acid.—P. G.

zoic acids, but the chemical deportment of these substances is altogether different from that of the analogous derivatives of acetic acid.

Further experiments are necessary to establish this view; the existence of two varieties of lactic acid, and of alanine and sarcosine, which are both represented by the formula



appears to indicate that similar isomerisms obtain also in the group of fatty acids.

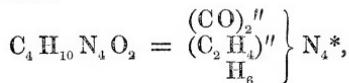
The above observations were collected in Dr. Hofmann's laboratory.

### VIII. "On the Ureas of the Diamines." By J. VOLHARD, Ph.D.

Communicated by Dr. HOFMANN. Received May 24, 1861.

The action of cyanic acid and of the cyanic ethers on the monamines gives rise to the formation of the substances known as the *compound ureas*. By substituting diamines for the monamines in the above reaction, I have succeeded in producing a series of compound ureas of a higher order, which are remarkable for their well-defined properties and for their characteristic decompositions.

Dichloride of ethylene-diammonium is readily attacked by cyanate of silver. On evaporating the solution, separated from the chloride of silver, a new substance crystallizing in prisms is obtained, which I designate as *ethylene-urea*. This body is soluble in water and alcohol; it contains



and is formed by one molecule of ethylene-diamine combining with two molecules of cyanic acid.

Ethylene-urea fuses at 192° C. It dissolves easily and without decomposition in hydrochloric or nitric acid, without, however, combining with these acids; the acid solutions, when evaporated to dryness, leave the pure ethylene-urea. When boiled with a very concentrated solution of potassa, this body assimilates the elements of water and splits into carbonic acid, ammonia, and ethylene-diamine,



\* H=1; O=16; C=12, &c.